COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Piedmont Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS
DRAFT/PROPOSED
County of Henrico
Springfield Road Landfill
10,600 Ford's Country Lane, Glen Allen, Virginia
Permit No. VA-51286

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Waste Management of Virginia, Inc. has applied for a Title V Operating Permit for its Charles City County Landfill facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date: September 19, 2006

Air Permit Manager: Date: September 19, 2006

Regional Director:_____ Date: September 19, 2006

Statement of Legal and Factual Basis

1. Introduction

1. Facility Information

Permittee/Facility
County of Henrico
Department of Public Utilities
P.O. Box 27032
Richmond, VA 23273

Facility
Springfield Road Landfill
10,600 Ford's Country Lane
Glen Allen, VA 23060

Responsible Official
Steve Yob, P.E.
Chief of Solid Waste
(804) 261-8217

Contact person
Timothy P. Torrez, P.E.
(804) 261-8774 FAX 8787

Registration No.: 51286
County Plant ID No.: 087-0217

2. Source Description

NAIC Code 562212 (SIC Code: 4953) - Springfield Road Landfill is a municipal solid waste landfill located at 10,600 Ford's Country Lane in Henrico County, Virginia. The landfill has operated since 1966 and is permitted to accept only solid wastes as defined and regulated by the Virginia Solid Waste Management Regulations. These wastes are generated from Henrico County and include general domestic household waste, commercial waste and construction debris. Only non-liquid, non-hazardous and non-infectious wastes are accepted at the landfill.

The facility is a Title V major source of non-methane organic compounds (NMOC). The source is located in a non-attainment area for Ozone and is not a PSD major source.

The Springfield Road Landfill has six cells on 192 acres. The cells are Eastern Fill, Western Fill and Phases I, II, III and IV. The Eastern, Western and Phase I cells are closed and capped. Phase II and Phase III are the operating cells and Phase IV is slated for construction in 2006.

Henrico County Springfield Road Landfill Design Capacity

Waste Permit No.	Waste Permit Date Issued	Phase	Fill Dates	Design Capacity, Mg
135	1973	East/West	1966-1989	1,451,000
496	June, 1986	Phase I	1989-1994	411,000
545	Dec., 1992	Phases II - IV	1994-2011	1,344,000
Total				3,206,000*

a. Compliance History

The New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills are located in 40 CFR 60 Subpart WWW. The NSPS provisions apply to new landfills, which are defined as landfills that commenced construction, modification or reconstruction on or after May 30, 1991. An existing landfill is defined as a landfill that commenced construction, modification or reconstruction on or before May 30, 1991 and is subject to the Emission Guidelines (EG).

Henrico County commenced construction on the Springfield Road Landfill in 1966 and modified the landfill in 1989 and 1994. The Springfield Road Landfill became subject to NSPS WWW because the modification occurred after the NSPS proposed date of May 30, 1991. When the NSPS was promulgated on March 12, 1996, the source was a new landfill subject to NSPS WWW.

A new small landfill is a landfill with a design capacity less than 2.5 million megagrams (Mg) or 2.5 m3. A large landfill is a landfill with a design capacity greater than or equal to 2.5 million Mg or m3. A small landfill is exempt from most of the requirements of NSPS WWW and is required to submit a Design Capacity Report only. A large landfill is subject to all parts of the NSPS. If the design capacity of a small landfill is increased to a revised capacity of 2.5 million Mg or greater, the landfill is subject to the compliance parts of the NSPS. The Springfield Road landfill was a small landfill that commenced construction in 1966 at a design capacity of 1,451,000 Mg and modified the design capacity in 1989 with an increase of 411,000 Mg to a total design capacity of 1,862,000 Mg. In 1994, the landfill increased its design capacity by 1,039,000 Mg to a total landfill design capacity of 2,901,000 Mg. Springfield Road Landfill was a small landfill that was modified to become a large landfill with a design capacity greater than 2.5 million Mg, and subject to the compliance parts of the NSPS.

Facilities that are subject to NSPS WWW must submit annual emission reports and must install controls if emissions are greater than or equal to 50 Mg a year. This is the time frame for NSPS compliance, according to Municipal Solid Waste Landfill NSPS and EG - Question and Answers, USEPA, OAQPS, November, 1998. A facility must submit a **design capacity report** by June 10, 1996 or within 90 days after commencement of construction, modification, or reconstruction. If the facility has a design capacity greater than or equal to 2.5 million Mg and 2.5 million m3, then the facility must use Tier 1 calculations to determine the NMOC emissions potential and report the results in the **Initial NMOC Emission Rate Report (Tier 1)**. If the report shows NMOC emissions are greater than or equal to 50 Mg/year, then the facility must submit a **collection and**

control design plan within 1 year and install a collection and control system within 30 months of the first report showing NMOC emissions greater than or equal to 50 Mg/year, unless the facility performs Tier 2 or Tier 3 measurements that show NMOC emissions less than 50 Mg/year and submits the results in a **Revised NMOC Emission Rate Report (Tier 2)**.

The first reporting step is the **Initial Design Capacity Report**, which determines the design capacity of the landfill on a volumetric or a mass basis. Henrico County submitted a design capacity report on June 11, 1996 for Phases I to IV and a design capacity report on August 30, 1996 for the East/West cells. Henrico County contended in 1996 these cells were separate landfills because of physical separation. DEQ determined in 1998 these cells were one facility because the cells are contiguous and under common ownership or control. On February 1, 1999, Henrico County submitted a **Revised Design Capacity Report** on the Springfield Road Landfill, including a map that showed a total design capacity of 2,901,000 Mg.

The next step is to use Tier I calculations to compare the calculated non-methane organic compounds (NMOC) mass emission rate from the entire facility to a standard of 50 Mg/year. Henrico County used the LandGEM model to perform the Tier I calculations with Clean Air Act default parameters and site-specific design capacity and annual waste acceptance rates. On January 25, 1999, Henrico County submitted an NMOC Emission Rate Report using Tier I calculations for the Springfield Road Landfill that showed NMOC emissions of 288 Mg in 1998 and maximum NMOC emissions of 304 Mg in the year 2009. These values are greater than 50 Mg/year.

If the NMOC mass emission rate values are greater than 50 Mg/year, a facility can submit a collection and control system plan or determine a **site specific NMOC concentration** via sampling and use Tier 2 calculations to determine the NMOC emission rate. Henrico County decided to determine a site specific NMOC concentration, which is determined by using EPA Method 25C or EPA Method 18. From January 19, 1999 to January 23, 1999, Henrico County conducted Tier 2 sampling using EPA Method 25C at the Springfield Landfill. Henrico County submitted a **Revised NMOC Emission Rate Report (Tier 2)** on March 17, 1999 that showed the average NMOC concentration was 164 ppmv. The results of the LandGEM Model using 164 ppmv showed an estimated NMOC emission rate of 11.9 Mg/yr for 1998 and 12.5 Mg/yr for the year 2009 when the landfill design capacity is reached. A new **NMOC Emission Rate Report (Tier 2)** was received on March 15, 2004 that showed the average NMOC concentration was 190 ppmv. The results of the LandGEM Model using 190 ppmv showed an estimated NMOC emission rate of 15.6 Mg/yr for the year 2008* when the landfill design capacity is reached. If the NMOC emissions are less than 50 Mg/year in each of 5 consecutive years, the facility can elect to submit a 5-year estimate of NMOC emissions from the landfill instead of an Annual Report ((60.757 (b) (1) (ii)). For each of the next 5 years, the landfill NMOC is estimated following the same procedures used for the annual estimates. A 5-year NMOC Emission Rate Report is based on the current amount of refuse in the landfill and the estimated waste acceptance rate for each of the 5 years covered by the report. The initial Annual NMOC Emission Rate Report must be submitted with in 90 days after the landfill commenced construction, modification for reconstruction on or after March 12, 1996. Subsequent NMOC Emission Rate Reports must be submitted annually or until criteria are met to allow the 5-year NMOC Emission Rate Report. Henrico County has elected to submit an annual NMOC Emissions Rate Report every year for 5 years and then, if the NMOC emissions are less than 50 Mg/year, the County will submit an estimate of the NMOC emissions rate for the next five years. Henrico County will monitor for site specific NMOC concentrations every five years until closure.

* On August 29, 2006, the landfill provided by letter a revised design capacity report for a calculated increased to the NMOC emissions based on the revised design capacity of 3,206,000 Mg, which increased to a maximum emission rate of 16.25 Mg/year of NMOC (no change to NSPS Subpart WWW applicability). A copy is attached to the Statement of Basis.

2. Emissions Units

a. Significant emission units:

- Municipal Solid Waste Landfill (SRL-001) operations with rated design capacity of 3.206 million mega-grams of municipal solid waste. Closed portions of landfill (Eastern, Western and Phase I cells) have passive gas venting systems that consist of horizontal piping in gravel trenches that lead to vertical vents that pass through the cap.

- Fugitive dust/emissions (SRL-002) from Municipal Solid Waste Landfill

b. Control equipment:

- None Applicable.

3. Emissions Inventory

According to the User's Manual LandGEM, February, 1998, the CAA default values provide emission estimates that reflect the expected maximum emissions and are used to determine the applicability of the regulations to the landfill. To estimate the actual emissions in the absence of site-specific data, a second set of default values, AP-42, are used. The AP-42 values provide emission estimates that reflect typical landfill emissions and are the values suggested for use in developing estimates for state inventories.

For the initial Tier I analysis, the source used LandGEM with CAA default values that determined 288.4 Mg/yr or 317.9 tons/yr of NMOC in 1998. The value is greater than the 50 Mg/year exemption level.

For the emission estimates, the source used LandGEM with AP-42 default values that determined 22.4 Mg/year or 24.7 tons/year of NMOC in 1998. NMOC is non-methane organic compounds, which include volatile organic compounds (VOC) as well as other organic compounds. NMOC is, at this time, used only for landfill purposes. The VOC and HAPS emissions are listed below.

The source conducted Tier II testing to obtain site specific date. The site specific data was used to calculate emission estimates of 15.6 Mg/yr estimated for 2008 using 190 ppmv from Tier II testing in the March 17, 2004 NMOC rate report. This was revised on August 29, 2006 by letter from the facility to include an increase in the design capacity to 3,206,000 Mg, which resulted in a revised maximum annual NMOC emission rate of 16.25 Mg. The facility is well below the 50 Mg NMOC level for NSPS Subpart WWW applicability.

Since the facility is an existing source, there are no applicable requirements to place emission limits on the source at this time. Therefore, there are no emission limits in the Title V permit.

4. Applicable Requirements

a. Emission Unit Applicable Requirements

1. There is one federal regulation, 40 CFR 60 Subpart WWW, applicable to the Springfield Road municipal solid waste landfill. Here are the applicable requirements:

Section 60.750 - Applicability, designation of affected facility, and delegation of authority.
60.750(a)
(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

Section 60.752 - Standards for air emissions from municipal solid waste landfills.
60.752(a)

(a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in Sec. 60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.

60.752(a)(1)
(1) The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in Sec. 60.757(a)(3).

60.752(a)(2)
(2) When an increase in the maximum design capacity of a landfill exempted from the provisions of Sec. 60.752(b) through Sec. 60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.

60.752(b)
(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in Sec. 60.754. The NMOC emission rate shall be recalculated annually, except as provided in Sec. 60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

Section 60.754 - Test methods and procedures
60.754(a)(1)
(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(I) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(I), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per mega-gram for L_0, and 4,000 parts per million by volume as hexane for the C_{NMOC}. For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorological site, the k value to be used is 0.02 per year.

60.754(a)(1)(I)
(I) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{I=1}^{n} 2\,k\,L_0\,M_i \left(e^{-kt_i}\right)\left(C_{NMOC}\right)\left(3.6 \times 10^{-9}\right)$$

where,

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, $year^{-1}$

L_0 = methane generation potential, cubic meters per mega-gram solid waste

M_I = mass of solid waste in the i^{th} section, megagrams

t_I = age of the i^{th} section, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained

60.754(a)(1)(ii)
(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2\,L_0\,R\,(e^{-kc} - e^{-kt})\,(C_{NMOC})\,(3.6 \times 10^{-9})$$

where,
M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, $year^{-1}$

L_0 = methane generation potential, cubic meters per mega-gram solid waste

R = average annual acceptance rate, megagrams per year

t = age of the landfill, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years. For an active landfill, c = 0 and $e^{-kc} = 1$

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating a value for R, if documentation of the nature and amount of such wastes is maintained.

60.754(a)(2)
(2) *Tier 1*. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

60.754(a)(2)(I)
(I) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in Sec. 60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under Sec. 60.752(b)(1).

60.754(a)(2)(ii)
(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with Sec. 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

60.754(a)(3)
(3) *Tier 2*. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C of appendix A of this part or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). If composite sampling is used, equal volumes shall be taken from each sample probe. If more than the required number of samples are taken, all samples shall be used in the analysis. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

60.754(a)(3)(I)
(I) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(I) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.

60.754(a)(3)(ii)
(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with Sec. 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.

60.754(a)(3)(iii)
(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in Sec. 60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.

60.754(a)(4)
(4) *Tier 3*. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(I) or (a)(1)(ii) of this section and using a site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

Section 60.757 - Reporting requirements.
Except as provided in Sec. 60.752(b)(2)(I)(B),

60.757(a)
(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

60.757(a)(1)
(1) The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required by Sec. 60.7(a)(1) and shall be submitted no later than:

60.757(a)(1)(I)
(I) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or

60.757(a)(1)(ii)
(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

60.757(a)(2)
(2) The initial design capacity report shall contain the following information:

60.757(a)(2)(I)
(I) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be land filled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

60.757(a)(2)(ii)
(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

60.757(a)(3)
(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in Sec. 60.758(f).

60.757(b)
(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

60.757(b)(1)
(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in Sec. 60.754(a) or (b), as applicable.

60.757(b)(1)(I)
(I) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(I)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

60.757(b)(1)(I)(A)
(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or

60.757(b)(1)(I)(B)
(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

60.757(b)(1)(ii)
(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

60.757(b)(2)
(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

60.757(b)(3)
(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with Sec. 60.752(b)(2), during such time as the collection and control system is in operation and in compliance with Sec. Sec. 60.753 and 60.755.

2. The other applicable requirements are the following provisions of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

9 VAC 5 -50-80 (Standards for Visible Emissions for New and Modified Sources), 9 VAC 5-50-90 (Standards for Fugitive Dust/Emissions for New and Modified Sources), 9 VAC 5-50-400 (Standards of Performance for New Stationary Sources), 9 VAC 5-80-50 (Federal Operating Permits for Stationary Sources), 9 VAC 5-80-710 (Insignificant Activities, Permits for New and Modified Sources).

b. Generally Applicable Requirements

Generally applicable requirements which apply to the source are the following provisions of the Commonwealth of Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution: 9 VAC 5 Chapter 170 (General Administration) and 9 VAC 5 Chapter 80 (Article 2: Permit Program Fees for Stationary Sources).

c. State-Only Requirements - The following terms and conditions are not required under the federal Clean Air Act or under any of its applicable federal requirements, and are not subject to the requirements of 9 VAC 5-80-290 concerning review of proposed permits by EPA and draft permits by affected states.

1. 9 VAC 5 Chapter 50, Part II, Article 2: Standards of Performance for Odorous Emissions

2. 9 VAC Chapter 50, Part II, Article 3: Standards of Performance for Toxic Pollutants

(9 VAC 5-80-110 N and 9 VAC 5-80-300)

d Future Applicable Requirements - If, using a site-specific NMOC value, the NMOC emission rate equals or exceeds 50 megagrams per year, then the facility shall submit a collection and design plan (60.752 b 2 and 60.759). In addition the facility will become applicable to 40 CFR 63, Subpart AAAA.

60.752(b)(2)
(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

60.752(b)(2)(I)
(I) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

60.752(b)(2)(ii)
(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in Sec. 60.757(c)(1) or (2).

60.752(b)(2)(ii)(A)
(A) An active collection system shall:

60.752(b)(2)(ii)(A)(1)
(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;

60.752(b)(2)(ii)(A)(2)
(2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:

(*I*) 5 years or more if active; or
(*ii*) 2 years or more if closed or at final grade;

60.752(b)(2)(ii)(A)(3)
(3) Collect gas at a sufficient extraction rate;

60.752(b)(2)(ii)(A)(4)
(4) Be designed to minimize off-site migration of subsurface gas.

60.752(b)(2)(ii)(B)
(B) A passive collection system shall:

60.752(b)(2)(ii)(B)(1)
(1) Comply with the provisions specified in paragraphs (b)(2)(ii), (A)(1), (2), and (4) of this section.

60.752(b)(2)(ii)(B)(2)
(2) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under §258.40 of this title.

60.752(b)(2)(iii)
(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

60.752(b)(2)(iii)(A)
(A) An open flare designed and operated in accordance with Sec. 60.18;

60.752(b)(2)(iii)(B)
(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in Sec. 60.754(d).

60.752(b)(2)(iii)(C)
(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section.

60.752(b)(2)(iv)
(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of Sections 60.753, 60.755 and 60.756.

60.752(b)(2)(v)
(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

60.752(b)(2)(iv)(A)
(A) The landfill shall be a closed landfill as defined in Sec. 60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in Sec. 60.757(d);

60.752(b)(2)(iv)(B)
(B) The collection and control system shall have been in operation a minimum of 15 years; and

60.752(b)(2)(iv)(C)
(C) Following the procedures specified in Section 60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

e. Inapplicable Requirements

There are no inapplicable requirements for this source.

f. Obsolete Requirements

60.752(a)(2)
(2) When an increase in the maximum design capacity of a landfill exempted from the provisions of Sec. 60.752(b) through Sec. 60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.

The facility submitted a revised design capacity report on February 1, 1999, which determined the total design capacity is 2.9 million Mg. This report contained all information required by WWW. Therefore, this requirement in WWW is obsolete.

Section 60.754 - Test methods and procedures.

60.754(a)
60.754(a)(1)
(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(I) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(I), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill.

The facility submitted an NMOC emission rate report using Tier 1 calculations showing emissions of NMOC greater than 50 mega-grams on January 25, 1999 (signed by a professional engineer). Since these requirements have been fulfilled, they are obsolete and will not be carried over into the Title V permit.

60.754(a)(3)
(3) *Tier 2*. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C of appendix A of this part or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). If composite sampling is used, equal volumes shall be taken from each sample probe.
The facility on March 23, 1999, submitted the results of a Tier II tests that determined a site specific NMOC concentration using EPA Method 25 C. The average NMOC was 164 ppmv and the LandGEM model using this value showed an estimated NMOC emission rate of 11.9 Mg/yr for 1998 . These requirements are also obsolete.

g. Streamlining of Requirements

There is no streamlining at this facility.

5. Standard Terms and Conditions

a. Facility Wide Conditions and Permit Terms
The permit contains general conditions required by 40 CFR 70 and 9 VAC 5-80-110 that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

b. General Permit Conditions
Recordkeeping and reporting
Failure/Malfunction Reporting
Permit Deviation Reporting
Severability
Duty to Comply
Need to Halt or Reduce Activity not a Defense
Permit Action for Cause
Property Rights
Duty to Submit Information
Duty to Supplement or Correct Application
Duty to Pay Permit Fees

Changes to Permits for Emissions Trading
Alternative operating scenarios
Inspection and entry requirements
Annual Compliance Certification
Reopening For Cause
Permit Availability
Transfer of Permits
Permit Expiration
Malfunction as an Affirmative Defense
Permit Revocation or Termination for Cause
Federal Enforceability

6. Periodic Monitoring

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The applicable periodic monitoring is defined as follows:

60.757(b)(1)(ii)

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

The facility will submit an Annual Report for five years. Then, if the NMOC emission rate is less than 50 Mg/year, the County will submit an estimate of the NMOC emission rate for the next five years. The facility will monitor for site specific NMOC concentrations every five years until closure.

7. Insignificant Activities -There are no insignificant activities.

8. Public Participation - The draft permit went to public notice in the Richmond Times-Dispatch on Wednesday, July 26, 2006 and was public noticed for 30 days. No comments were received.

On August 29, 2006, the landfill provided by letter a revised design capacity report for a calculated increased to the NMOC emissions based on the revised design capacity of 3,206,000 Mg, which increased to a maximum emission rate of 16.25 Mg/year of NMOC (no change to NSPS Subpart WWW applicability). A copy is attached to this Statement of Basis.

9. Confidentiality - N/A